



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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BOSTON, MASSACHUSETTS 02114-2023

September 27, 2001

Lonnie Monaco (monacolj@exchange.efdnorth.northdiv.navy.mil)
Engineering Field Activity Northeast, Naval Facilities Engineering Command
Code 1821/LM
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

**Re: Summary of April/May 2001 Aqueous Diffusion Sampling Pilot Study at the Eastern Plume
and Site 9, Naval Air Station Brunswick, Maine**

Dear Mr. Monaco:

Thank you for the opportunity to review the above referenced report which was prepared for the Navy by EA Engineering Science and Technology and received by the EPA on September 4, 2001.

Passive diffusion samplers have been around now for a few years and though they are not yet in common use, a large body of experience has been obtained such that a fairly accurate assessment of their technical performance vis a vis low-flow or purging sampling is possible.

The pilot studies at NAS Brunswick have been conducted at a relatively rigorous level in terms of side by side comparability with traditional methods. As such, EPA is in general concurrence with the report conclusions and recommendations. In fact, I believe the technical case could be made for a more aggressive implementation of their use at NAS Brunswick. However, as diffusion samplers are a new technology, implementation of their use should be discussed to the satisfaction of the entire project team and their pilot use be documented prior to sampling events until such time as the long term monitoring plan is formally revised.

Our comments to the reports are attached. I sincerely appreciate the effort expended and manner in which the Navy and EA have undertaken to implement passive diffusion sampler technology; further, the NAS Brunswick project team should be justly proud to be on the forefront of our industry. For any questions, please contact me at 617.918.1344 or barry.michael@epa.gov.

Sincerely,


Michael S. Barry
Remedial Project Manager
Federal Facilities Superfund Section

Attachment
Enclosures

cc. Al Easterday/EA (aeasterd@eaest.com)
Carolyn LePage/LePage Environmental (clepagegeo@aol.com)
Alastair Lough/Gannet-Fleming (jlough@gfnet.com)
Pete Nimmer/EA Environmental (pln@eaest.com)

Attachment

With the exception of comment 1, our comments are general in nature and are meant to serve as a starting point for project team discussion in person or on conference calls. Due to the temporary hold on the Fall sampling event, it may be possible to discuss and resolve diffusion sample pilot program sampling recommendations prior to the fall 2001 sampling event. My points follow along the lines of my email of 9/26/2001. The term "samplers" has been used for the liquid diffusion samplers.

1. MW-1104 appears to have exhibited anomalous results and none of the samplers tracked with the low flow sample. This could indicate that low flow sampling is pulling water from an extreme edge of the screen or along the casing; or could be a bad lab result. To confirm, this well should be sampled with low flow and three samplers on the next round.
2. Samplers are believed to accurately measure the concentration of VOCs present, but they measure differently than low flow or purge sampling. Thus, the current thinking is that samplers should be parallel checked against a traditional method to ensure something abnormal isn't occurring in the well. Since detecting an anomaly, rather than a trend is the objective, this only needs to occur once. MW-1104 is the only well at NASB with clearly anomalous results.
3. For sites with historical information, results from previous rounds can be used for the parallel check to confirm that the results roughly compare with historical trends. I'd say sites 9, 1 & 3 and the Eastern Plume fit this category. Again, the primary concern is you are looking to ensure something abnormal isn't occurring in the well.
4. Vertical stratification across a well screen more than 5 feet long is very common and must be checked out. The consensus is that checking this once is good enough unless the well is subject to wide temporal fluctuations (basically anything that upsets a long term equilibrium). The sampler developer also advocates that screening level sampling/analysis (such as vapor samplers or liquid samplers with headspace analysis) is sufficient to check for stratification as the relative difference, or highest interval to sample at is being sought. This can reduce the cost in "shifting over."
5. Samplers can be left in a relatively long time. This could allow deployment of the next round samplers when the current round ones are pulled. The only concern is that lengthy deployment (half year or year) may result in a scum. This is very site specific and simple inspection will verify if it's a problem or not.
6. Low concentration accuracy is more a function of the analytical than diffusion sampler method, thus samplers can be used for boundary/sentinel wells. In fact, since they look at discrete intervals, they may give a better read of the full extent of the true plume edge.